

ABSTRACT

A rotary fluid machine, such as a pump or motor, is provided with a fluid flow control mechanism that allows the flow of fluid to be easily and precisely controlled. The device has a housing with a spherical interior in which primary and secondary vanes rotate, with the secondary vane reciprocating between open and closed positions. The primary and secondary vanes define fluid chambers within the housing that communicate with inlet and outlet ports of the device. An adjustable fixed shaft, about which the secondary vane rotates, allows the degree of communication to be varied between the inlet and outlet ports and the chambers formed by the primary and secondary vanes. In this way, the flow rate or fluid capacity of the device, and even the direction of fluid flow, can be changed.